

What is claimed is:

1. A dielectric ceramic material comprising a solid solution of which dominant crystal phase comprises a perovskite crystal, and the perovskite crystal comprises a complex oxide of
5 at least Ba, Sr, Mg, W and a rare earth element.

2. The dielectric ceramic material according to claim 1, wherein a perovskite crystal is contained in the amount of at least 90% by volume.

3. The dielectric ceramic material according to claim 1,
10 wherein at least Ba, Sr, Mg, W and a rare earth element are contained as metal elements, and when oxides of these metal elements are represented by $a\text{BaO} \cdot b\text{SrO} \cdot c\text{MgO} \cdot d\text{WO}_3 \cdot e\text{RE}_2\text{O}_x$ ($3 \leq x \leq 4$, RE represents a rare earth element)) in a molar ratio of the metal oxides, the factors a, b, c, d and e satisfy the following
15 relationships:

$$0.35 \leq a \leq 0.55,$$

$$0.01 \leq b \leq 0.25,$$

$$0.10 \leq c \leq 0.30,$$

$$0.15 \leq d \leq 0.35,$$

20 $0.01 \leq e \leq 0.20$, and

$$a + b + c + d + e = 1$$

4. The dielectric ceramic material according to claim 1, wherein the rare earth element (RE) is Yb.

5. The dielectric ceramic material according to claim 1,
25 wherein Mn is contained as the metal element in the amount of 0.01

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to 2% by weight on MnO_2 basis.

6. A dielectric resonator comprising the dielectric ceramic material of any one of claims 1 to 5 disposed between a pair of input and output terminals, so as to function through
5 electromagnetic coupling.

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